No. 200100111

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

CIMMYT (International Center for Wheat and Maize Improvement)
State of Oregon, Acting by and through the State Board of Higher
Education on behalf of Oregon State University

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE , OR USING IT IN ING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY P ION ACT. IN THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS A CLAS IFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS SPECIFIED BY THE OWNER OF THE RIG TAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

WHEAT, COMMON

'Winsome'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this twelfth day of September, in the year two thousand one.

Attest:

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

ary of Agriculture

REPRODUCE LOCALLY. *Include form number and date on all reproductions*

Form Approved - OMB No. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF OWNER (CIMMYT (International Center for Wheat and Maize Improvement) 4-25-01 mmh)
State of Oregon, Acting by and through the State Board of Higher Education on behalf of Oregon State U.

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME
OR 4870453

3. VARIETY NAME
WINSOME

4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)*
c/o OFFICE OF TECHNOLOGY TRANSFER
Oregon State University
312 Kerr Administration Building
Corvallis, Oregon 97331-2140

5. TELEPHONE *(include area code)*
(541) 737-0674

6. FAX *(include area code)*
(541) 737-3093

FOR OFFICIAL USE ONLY

PVPO NUMBER
200100111

FILING DATE
2-14-2001

7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION *(corporation, partnership, association, etc.)*
Non-profit public institution of higher education

8. IF INCORPORATED, GIVE STATE OF INCORPORATION
Oregon

9. DATE OF INCORPORATION

10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. *(First person listed will receive all papers)*
William Hostetler, Director
Office of Technology Transfer
Oregon State University
312 Kerr Administration Building
Corvallis, Oregon 97331-2140

FEES RECEIVED

FILING AND EXAMINATION FEES:
$ 2450.00
DATE 2/14/01

CERTIFICATION FEE:
$ 320.00
DATE 6/25/01

11. TELEPHONE *(include area code)*
(541) 737-0674

12. FAX *(include area code)*
(541) 737-3093

13. E_MAIL
William.Hostetler@orst.edu

14. CROP KIND *(Common Name)*
Hard White Common Wheat

15. GENUS AND SPECIES NAME OF CROP
Triticum aestivum

16. FAMILY NAME *(Botanical)*
Graminacae

17. IS THE VARIETY A FIRST GENERATION HYBRID?
☐ YES ☒ NO

18. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse)

a. ☒ Exhibit A. Origin and Breeding History of the Variety
b. ☒ Exhibit B. Statement of Distinctness
c. ☒ Exhibit C. Objective Description of Variety
d. ☒ Exhibit D. Additional Description of the Variety *(Optional)*
e. ☒ Exhibit E. Statement of the Basis of the Owner's Ownership
f. ☒ Voucher Sample *(2,500 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository)*
g. ☒ Filing and Examination Fee ($2,450), made payable to "Treasurer of the United States" *(Mail to the Plant Variety Protection Office)*

19. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? *See Section 83(a) of the Plant Variety Protection Act)*
☒ YES *(If "yes", answer items 20 and 21 below)* ☐ NO *(If "no," go to item 22)*

20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
☐ YES ☒ NO

21. IF "YES" TO ITEM 20, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?
☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED

22. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES?
☒ YES ☐ NO
IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. *(Please use space indicated on reverse.)*

23. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT *(PLANT BREEDER'S RIGHT OR PATENT)*?
☐ YES ☒ NO
IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. *(Please use space indicated on reverse.)*

24. The owners declare that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.

The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Owner(s) is(are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF OWNER	SIGNATURE OF OWNER
William Hostetler	
NAME *(Please print or type)*	NAME *(Please print or type)*
William Hostetler	
CAPACITY OR TITLE / DATE	CAPACITY OR TITLE / DATE
Director Technology Transfer / 2/12/01	

INSTRUCTIONS

200100111

GENERAL: To be effectively filed with the Plant Variety Protection Office (PVPO), ALL of the following items must be received in the PVPO: (1) Completed application, form signed by the owner; (2) completed exhibits A, B, C, E; (3) for a seed reproduced variety at least 2,500 viable untreated seeds, for a hybrid variety at least 2,500 untreated seeds of each line necessary to reproduce the variety, or for tuber reproduced varieties verification that a viable *(in the sense that it will reproduce an entire plant)* tissue culture will be deposited and maintained in an approved public repository; (4) check drawn on a U.S. bank for $2,450 ($300 filing fee and $2,150 examination fee), payable to "Treasurer of the United States" *(See Section 97.6 of the Regulations and Rules of Practice.)* Partial applications will be held in the PVPO for not more than 90 days, then returned to the applicant as unfiled. Mail application and other requirements to Plant Variety Protection Office, AMS, USDA, Room 500, NAL Building, 10301 Baltimore Avenue, Beltsville, MD 20705-2351. Retain one copy for your files. All items on the face of the application are self explanatory unless noted below. Corrections on the application form and exhibits must be initialed and dated. DO NOT use masking materials to make corrections. If a certificate is allowed, you will be requested to send a check payable to "Treasurer of the United States" in the amount of $300 for issuance of the certificate. Certificates will be issued to owner, not licensee or agent.

Plant Variety Protection Office
Telephone: (301) 504-5518
FAX: (301) 504-5291
Homepage: http://www.ams.usda.gov/science/pvp.htm

ITEM

18a. Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method;
(2) the details of subsequent stages of selection and multiplication;
(3) evidence of uniformity and stability; and
(4) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified

18b. Give a summary of the variety's distinctness. Clearly state how this application variety may be distinguished from all other varieties in the same crop. If the new variety is most similar to one variety or a group of related varieties:

(1) identify these varieties and state all differences objectively;
(2) attach statistical data for characters expressed numerically and demonstrate that these are clear differences; and
(3) submit, if helpful, seed and plant specimens or photographs (prints) of seed and plant comparisons which clearly indicate distinctness

18c. Exhibit C forms are available from the PVPO Office for most crops; specify crop kind. Fill in Exhibit C (Objective Description of Variety) form as completely as possible to describe your variety.

18d. Optional additional characteristics and/or photographs. Describe any additional characteristics that cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, *etc.*

18e. Section 52(5) of the Act requires applicants to furnish a statement of the basis of the applicant's ownership. An Exhibit E form is available from the PVPO.

19. If "Yes" is specified *(seed of this variety be sold by variety name only, as a class of certified seed)*, the applicant MAY NOT reverse this affirmative decision after the variety has been sold and so labeled, the decision published, or the certificate issued. However, if "No" has been specified, the applicant may change the choice. *(See Regulations and Rules of Practice, Section 97.103).*

22. *See Sections 41, 42, and 43 of the Act and Section 97.5 of the regulations for eligibility requirements.*

23. *See Section 5.5 of the Act for instructions on claiming the benefit of an earlier filing date.*

---

22. CONTINUED FROM FRONT *(Please provide the date of first sale, disposition, transfer, or use for each country and the circumstances, if the variety (including any harvested material) or a hybrid produced from this variety has been sold, disposed of, transferred, or used in the U.S. or other countries.)*

First date of foundation seed sale: February 17, 2000

---

23. CONTINUED FROM FRONT *(Please give the country, date of filing or issuance, and assigned reference number, if the variety or any component of the variety is protected by intellectual property right (Plant Breeder's Right or Patent).)*

NOTES: It is the responsibility of the applicant/owner to keep the PVPO informed of any changes of address or change of ownership or assignment or owner's representative during the life of the application/certificate. There is no charge for filing a change of address. The fee for filing a change of ownership or assignment or any modification of owner's name is specified in Section 97.175 of the regulations. *(See Section 101 of the Act, and Sections 97.130, 97.131, 97.175(h) of the Regulations and Rules of Practice.)*

To avoid conflict with other variety names in use, the applicant must check the variety names proposed by contacting: Seed Branch, AMS, USDA, Room 213, Building 306, Beltsville Agricultural Research Center–East, Beltsville, MD 20705. Telephone: (301) 504-8089.

TC-470 (6-98) designed by the Plant Variety Protection Office with WordPerfect 6.0a. Replaces STD-470 (03-96) which is obsolete.

Exhibit A – Origin and Breeding History

Winsome is a hard white spring wheat (*Triticum aestivum* L.) developed and released by Oregon State University for production in the Pacific Northwest. Winsome is an F6 derived line from the cross 'Hork' sib/'Yamhill' //'Kalyansona'/'Bluebird'. The original selection was obtained as a single head selection from a single F2 plant grown in Obregon, Mexico. F3 through F7 generations were advanced through a head to row pedigree breeding method, then the F7 row was bulk harvested. Selection generations were alternated between Toluca and Obregon, Mexico nursery sites in a shuttle breeding approach using 2 generations per year. Toluca is a high elevation site with humid conditions that promote foliar diseases such as stripe and stem rust and mildew. Obregon is low elevation, irrigated site in the Yaqui valley with conditions that promote leaf rust and late season heat stress. F2, F4, F6 generations were grown over the winter months in Obregon for selection of plant phenotype, including plant height, semidwarf stature, tillering, head size, and response to heat stress, stripe and leaf rust. F3, F5, and F7 generations were grown in summer months in Toluca, Mexico, for selection of plant phenotype, stripe and stem rust reaction.

Winsome was evaluated in the 18th IBWSN (International Bread Wheat Screening Nursery) in 1985 as experimental line CM38212-I-7Y-2M-1Y-3M-2Y-0M. Winsome also was grown as an F8 single row at the Hyslop Agronomy Farm, Corvallis, Oregon in 1985, where it was selected and bulk harvested based on promising agronomic performance and tolerance to local diseases including stripe rust, leaf rust, and *Septoria tritici*. Winsome was tested in replicated yield trials in Oregon from 1987 to 1999 under the experimental designation OR4870453.

In 1996, 500+ heads were selected from a small plot (5' x 40') grown at the Hyslop Agronomy Farm. The heads were threshed and selected for uniform seed color and seed size. Five hundred of the selected heads were grown as individual rows in 1997 at Kimberly, Idaho and uniform rows were bulked to produce Breeder Seed.

Evidence of Uniformity and Stability

Winsome is uniform and stable and has been observed to be uniform and stable over the past five generations. Winsome has remained unchanged in all distinguishing characteristics since phenotypically-similar headrows were bulked as Breeder Seed in 1997. Evidence for stability includes evaluations conducted through Oregon and Washington Statewide Variety Trials, USDA-ARS Regional Nursery Trials, and in OSU Wheat Breeding Trials from 1998 through 2000.

Winsome may contain up to 5 red kernels per one pound of seed in Breeder, Foundation, Registered, or Certified seed classes. Winsome also may

up to a total of 1 in 40,000 combined of the following naturally occurring variants: plants that are 8 to 15 cm taller; plants which are 5 to 8 days later in maturity; plants with non-clavate head architecture. The variants described are distinct within the variety and are stable and predictable, with a degree of reliability comparable to other varieties of the same kind. Variants are within recognized tolerances and were originally a part of the variety when released.

Exhibit B – Statement of Distinctness

Winsome is a hard white spring wheat adapted to high yielding environments in the Pacific Northwest. As a hard white wheat, Winsome is distinct from nearly all spring wheat varieties grown in the Pacific Northwest and the US based on kernel texture and kernel color. Winsome is most similar to the commercial hard white spring wheat variety ID377s, developed by the University of Idaho. Winsome differs from ID377s in that it has a clavate head shape while ID377s has a strap head shape. Winsome averages 1 day later than ID377s in flowering date under Oregon conditions. Winsome averages 2.5 cm shorter in plant height, and is more lodging resistant than ID377s. Winsome is moderately resistant to current field races of leaf rust, while ID377s is moderately, to fully, susceptible. Winsome has harder grain than ID377s as measured by the Pertin Single Kernel Characterization System. Winsome averages 5 g/kg lower in grain protein than ID377s, but it has generally similar end-use properties. Winsome differs from the hard white spring wheat 'Klasic' in that grain of Winsome has low levels of polyphenol oxidase activity in the grain, while Klasic has high levels of this enzyme.

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE DIVISION
BELTSVILLE, MARYLAND 20705

EXHIBIT C
(Wheat)

OBJECTIVE DESCRIPTION OF VARIETY
WHEAT (*Triticum* spp.)

200100111

NAME OF APPLICANT(S) State of Oregon, Acting by and through the State Board of Higher Education on behalf of Oregon State Univ.

ADDRESS (*Street and No. or R.F.D. No., City, State, and Zip Code*)
c/o OFFICE OF TECHNOLOGY TRANSFER
Oregon State University
312 Kerr Administration Building
Corvallis, OR 97331-3002

FOR OFFICIAL USE ONLY

PVPO NUMBER

VARIETY NAME
WINSOME

TEMPORARY OR EXPERIMENTAL DESIGNATION
OR 4870453

PLEASE READ ALL INSTRUCTIONS CAREFULLY: Place the appropriate number that describes the varietal character of this variety in the boxes below. Place a zero in the first box (e.g. [ ][ ][ ] or [ ][ ]) when number is either 99 or less or 9 or less respectively. Data for quantitative plant characters should be based on a minimum of 100 plants. Comparative data should be determined from varieties entered in the same trial. Royal Horticultural Society or any recognized color standard may be used to determine plant colors; designate system used: _____

Please answer all questions for your variety; lack of response may delay progress of your application.

1. KIND:

[1] 1=Common 2=Durum 3=Club 4=Other (SPECIFY) _____

2. VERNALIZATION:

[1] 1=Spring 2=Winter 3=Other (SPECIFY) _____

3. COLEOPTILE ANTHOCYANIN:

[1] 1=Absent 2=Present

4. JUVENILE PLANT GROWTH:

[3] 1=Prostrate 2=Semi-erect 3=Erect

5. PLANT COLOR (boot stage):

[2] 1 = Yellow-Green 2 = Green 3 = Blue-Green

6. FLAG LEAF (boot stage):

MK 4-25-01

[2] 1 = Erect 2 = Recurved [1] 1 = Not Twisted 2 = Twisted

7. EAR EMERGENCE:

[ ][ ] Number of Days Earlier Than _____ *

[ ][1] Number of Days Later Than ID377S *

8. ANTHER COLOR:

[1] 1 = YELLOW 2 = PURPLE

9. PLANT HEIGHT (from soil to top of head, excluding awns):

[ ][6] cm Taller Than Penawawa *

[ ][3] cm Shorter Than ID 377S *

* Relative to a PVPO-Approved Commercial Variety Grown in the Same Trial

200100111

10. STEM:

A. ANTHOCYANIN

[1] 1= Absent 2=Present

B. WAXY BLOOM

[1] 1=Absent 2=Present

C. HAIRINESS (last internode of rachis)

[1] 1=Absent 2=Present

D. INTERNODE (SPECIFY NUMBER) 5

[1] 1=Hollow 2=Semi-solid 3=Solid

E. PEDUNCLE

[1] 1=Absent 2=Present

[ ] cm Length

11. HEAD (at Maturity):

A. DENSITY

[2] 1=Lax 2=Middense 3= Dense

B. SHAPE

[3] 1 = Tapering 2= Strap 3 = Clavate 4 = Other (SPECIFY)_____

C. CURVATURE

[1] 1 = Erect 2 = Inclined 3 = Recurved

D. AWNEDNESS

[4] 1 = Awnless 2 = Apically Awnletted 3 = Awnletted 4 = Awned

12. GLUMES (at Maturity):

A. COLOR

[1] 1 = White 2 = Tan 3 = Other (SPECIFY)_____

B. SHOULDER

[2] 1 = Wanting 2 = Oblique 3 = Rounded 4 = Square 5 = Elevated 6 = Apiculate

C. BEAK

[3] 1 = Obtuse 2 = Acute 3 =Acuminate

D. LENGTH

[2] 1 = Short (ca. 7mm) 2 = Medium (ca. 8mm) 3 = Long (ca. 9mm)

E. WIDTH

[1] 1 = Narrow (ca. 3mm) 2 = Medium (ca. 3.5mm) 3 = Wide (ca. 4mm)

13. SEED:

A. SHAPE

[2] 1 = Ovate 2 = Oval 3 = Elliptical

B. CHEEK

[2] 1=Rounded 2=Angular

C. BRUSH

[1] 1=Short 2=Medium 3=Long

[1] 1 = Not Collared 2 = Collared

D. CREASE

[1] 1 = Width 60% or less of Kernel
2 = Width 80% or less of Kernel
3 = Width Nearly as Wide as Kernel

[1] 1 = Depth 20% or less of Kernel
2 = Depth 35% or less of Kernel
3 = Depth 50% or less of Kernel

4-25-01

13. SEED: (continued)

E. COLOR

[1] 1 = White 2 = Amber 3 = Red 4 = Other (SPECIFY) _____

F. TEXTURE

[1] 1=Hard 2=Soft

G. PHENOL REACTION *(see instructions)*:

[1] 1 = Ivory 2 = Fawn 3 = Light Brown 4 = Dark Brown 5 = Black

14. DISEASE: (0=Not Tested; 1=Susceptible; 2=Resistant; 3=Intermediate; 4=Tolerant)

PLEASE INDICATE THE SPECIFIC RACE OR STRAIN TESTED

Stem Rust *(Puccinia graminis* f. sp. *tritici)*
[0] _____

Stripe Rust *(Puccinia striiformis)*
[3] Field races

Tan Spot *(Pyrenophora tritici-repentis)*
[0] _____

Halo Spot *(Selenophoma donacis)*
[0] _____

Septoria nodorum (Glume Blotch)
[0] _____

Septoria avenae (Speckled Leaf Disease)
[0] _____

Septoria tritici (Speckled Leaf Blotch)
[0] _____

Scab (*Fusarium* spp.)
[0] _____

"Black Point" (Kernel Smudge)
[0] _____

Barley Yellow Dwarf Virus (BYDV)
[0] _____

Soilborne Mosaic Virus (SBMV)
[0] _____

Wheat Yellow (Spindle Streak) Mosaic Virus
[0] _____

Wheat Streak Mosaic Virus (WSMV)
[0] _____

Other (SPECIFY) _____
[ ] _____

Other (SPECIFY) _____
[ ] _____

Other (SPECIFY) _____
[ ] _____

Leaf Rust *(Puccinia recondita* f. sp. *tritici)*
[3] Field races

Loose Smut *(Ustilago tritici)*
[0] _____

Flag Smut *(Urocystis agropyri)*
[0] _____

Common Bunt *(Tilletia tritici* or *T. laevis)*
[0] _____

Dwarf Bunt *(Tilletia controversa)*
[0] _____

Karnal Bunt *(Tilletia indica)*
[0] _____

Powdery Mildew *(Erysiphe graminis* f. sp. *tritici)*
[0] _____

"Snow Molds"
[0] _____

Common Root Rot *(Fusarium, Cochliobolus* and *Bipolaris* spp.)
[0] _____

Rhizoctonia Root Rot *(Rhizoctonia solani)*
[0] _____

Black Chaff *(Xanthomonas campestris* pv. *translucens)*
[0] _____

Bacterial Leaf Blight *(Pseudomonas syringae* pv. *syringae)*
[0] _____

Other (SPECIFY) _____
[ ] _____

Other (SPECIFY) _____
[ ] _____

Other (SPECIFY) _____
[ ] _____

Other (SPECIFY) _____
[ ] _____

15. INSECT: .(0=Not Tested; 1=Susceptible; 2=Resistant; 3=Intermediate; 4=Tolerant)

PLEASE SPECIFY BIOTYPE (where needed)

2001001111

Hessian Fly *(Mayetiola destructor)*
[0] _____

Other (SPECIFY) _____
[ ] _____

Stem Sawfly *(Cephus* spp.)
[0] _____

Other (SPECIFY) _____
[ ] _____

Cereal Leaf Beetle *(Oulema melanopa)*
[0] _____

Other (SPECIFY) _____
[ ] _____

Russian Aphid *(Diuraphis noxia)*
[0] _____

Other (SPECIFY) _____
[ ] _____

Greenbug *(Schizaphis graminum)*
[0] _____

Other (SPECIFY) _____
[ ] _____

Aphids
[0] _____

Other (SPECIFY) _____
[ ] _____

16. ADDITIONAL INFORMATION ON ANY ITEM ABOVE, OR GENERAL COMMENTS:

Exhibit C – Updated information

Flag leaf is not twisted.
Seed brush is not collared
Seed crease depth is 20% or less of kernel

Exhibit C – Objective Description

Winsome is a hard white spring wheat (*Triticum aestivum L.*) cultivar released for its adaptation to high yielding environments in the Pacific Northwest and end-use qualities suitable for Asian noodle applications. Winsome has shown superior leaf rust and lodging resistance and superior milling characteristics as compared with the hard white spring cultivar 'ID377S'.

Winsome is a medium-late maturing semidwarf with good lodging resistance. In Oregon variety trials from 1997 through 1999, Winsome averaged one day later in heading date compared with the hard white spring wheat variety ID377S and three days later than the soft white cultivar 'Penawawa'. In Southern Idaho variety trials, Winsome averaged five days later in heading date than ID377S. Winsome has demonstrated superior lodging resistance as compared with ID377S in both Oregon and Idaho trials. Plant height of Winsome averaged approximately 1 inch less than ID377S and 2.5 inches more than Penawawa.

Winsome is moderately resistant to prevalent races of stripe rust *(Puccinia striiformis)* and leaf rust (*P. recondita Roberge ex Desmaz.*). Compared with ID377S, it has shown superior leaf rust resistance. Its stripe rust resistance has been superior to Penawawa and 'Alpowa'.

Winsome was evaluated in breeding trials at Pendleton and Corvallis since 1987. In the last five years of testing, Winsome averaged 2.2 bu/a higher grain yield than ID377S and 8.0 bu/a higher grain yield than 'Klasic'. Winsome was evaluated in the USDA-ARS Western Regional Hard Spring Wheat Nursery from 1990-1992, during which its grain yields were slightly lower than ID377S, but significantly higher than Klasic.

Winsome was tested in the Oregon State Variety Trials from 1997 to 1999. Winsome averaged 66.0 bu/a grain yield over 30 trials, 1.5 bu/a lower than ID377S and 2.9 bu/a less than Penawawa. In three years of Washington State Variety trials, Winsome averaged 1.2 bu/a less grain yield than ID377S and 0.8 bu/a higher yield than Penawawa. ID377S has shown a greater yield advantage over Winsome in Southern Idaho variety trials, averaging 91.3 bu/a over three years compared with 82.9 bu/a for Winsome. Compared with the hard red spring cultivars 'Scarlet', 'WPB 926' and 'WPB 936', Winsome has shown higher grain yield potential in Oregon and Washington trials.

Winsome has averaged 0.7 to 0.9 lb/bu lower in test weight than ID377S in both the Oregon and Washington state variety trials. Grain protein concentrations of Winsome averaged 11.6% in Oregon variety trials, 0.6% lower in protein content than ID377S and 0.7% higher than Penawawa. Similar differences in grain proteins levels were observed in the 1999 Washington variety trials.

End-use quality attributes of Winsome were evaluated at the USDA-ARS Western Wheat Quality Laboratory (USDA-WWQL) from 1990 to 1998. Winsome is considered as having commercially acceptable end-use properties for the hard white wheat market class. Winsome has exhibited slightly lower test weight and kernel weight as compared to ID377S and Klasic, but it has harder grain and superior milling quality compared to ID377S. Milling quality of Winsome is similar to Klasic, which is considered to have superior hard wheat milling properties. Winsome has slightly improved bread baking properties as compared with ID377S, as indicated by higher loaf volume potential. Winsome has similar dough mixing properties to ID377S, but requires less mixing time than Klasic. Winsome has a lower grain protein content than Klasic, with correspondingly lower loaf volume, but has shown superior crumb grain scores. Starch quality of Winsome is typical of normal amylose wheats. Winsome has acceptable noodle color properties, similar to ID377S and superior to that of Klasic. Klasic possesses color properties unacceptable for Asian noodle products.

Hokkien and Taiwanese raw noodle processing qualities of Winsome were evaluated by the Wheat Marketing Center. Hokkien noodle color and textural properties of Winsome were rated as similar or better than the commercial noodle flours used as controls. Winsome was rated similar to ID377S for machining and textural properties, but it exhibited slightly darker noodle color. In Taiwanese raw noodle evaluations, Winsome was rated as having qualities similar to commercial flours for noodle color and texture. Winsome was superior to ID377S for noodle color and texture in the 1995 crop year, but the varieties were rated as similar in the 1998 tests. Based on the WWQL and WMC evaluations, Winsome appears to have end-use qualities that are acceptable for most Asian noodle applications.

Exhibit D - Supporting Data and Information

Supporting data is included in the attached tables. Yield and agronomic data are provided from replicated trials grown in an array of environmentally diverse environments. Sources of data include Oregon, Washington, and Idaho State Variety Trials, USDA-ARS Regional Nursery Trials, and OSU Wheat Breeding Nursery Trials. Three or four replications were used at each field trial location. Analysis of variance, LSD procedures, and t-tests were calculated for comparisons among varieties for quantitative traits. Over-location analyses of variance often were not calculated or provided by the Nursery Coordinators, hence are often not available.

Table 1. Mean grain yield, test weight, protein percent (12% moisture), Julian heading date, plant height, and lodging for selected spring wheat lines evaluated in the 1997-1999 OSU statewide variety testing program.

		Yield* (bu/a)	Twt (lbs/bu)	Protein %	Heading date	Height (in)	Lodging (%)
Variety	Class	30 Site-Years	30 Site-Years	30 Site-Years	8 Site-Years	10 Site-Years	8 Site-Years
Winsome	HWS	66.0 a	60.4 a	11.6 dc	167 a	33.3 ab	26 a
ID377S	HWS	67.5 a	61.1 a	12.2 bc	166 a	34.2 a	54 a
Penawawa	SWS	68.9 a	60.9 a	10.9 d	164 a	30.8 ab	19 a
WPB 936	HRS	64.2 a	60.8 a	13.3 a	166 a	31.2 ab	23 a
Mean	-	66.1	60.9	12.1	165	31.6	30

*Means with the same letter are not significantly different based on t-groupings.

Table 2. Mean yield, test weight, plant height, Julian heading date, lodging and shattering for selected spring wheat lines grown in the 1997-1999 University of Idaho Southern Idaho Variety Trials.

	Mean Yield* (bu/a)			Test Wt.	Height	Heading date from Jan. 1	Lodging	Shatter
	1997	1998	1999	lb/bu	in.		%	%
Variety	7 sites	6 site	14 sites	1999-14 sites	1999-14 sites	1999-14 sites	1999-3 sites	1999-4 sites
Winsome	103.7 a	77.1 a	67.8 a	58.5 abc	28.9 a	189.7 ab	45	50
ID377S	113.1 a	84.3 a	76.7 a	60.3 ab	30.5 a	184.5 ab	92	13
Klasic	96.6 a	74.6 a	69.8 a	60.4 ab	22.7 b	180.2 b	0	0
IDO523	---	76.5 a	73.3 a	58.1 bc	29.0 a	189.6 ab	20	34
IDO533	---	82.3 a	75.9 a	60.9 ab	31.4 a	185.8 ab	93	21
Mean	104.5	79.0	72.7	59.6	28.5	186	50	24

*Means with the same letter are not significantly different based on t-groupings.

Table 3. Mean yield, test weight, and protein percent for selected spring wheat lines evaluated in the 1997-1999 Washington State University statewide variety testing program.

		Mean Yield* bu/a		Test Wt. lbs/bu	Protein %
		1997-1999	1999	1999	1999
Variety	**Class**	**13 sites**	**14 sites**	**14 sites**	**14 sites**
Winsome	HWS	57.4 a	54.6 a	60.1 a	11.6 cd
ID377S	HWS	58.6 a	57.1 a	61.0 a	12.3 bc
Penawawa	SWS	56.6 a	51.8 a	60.3 a	10.9 d
Scarlet	HRS	55.2 a	53.0 a	60.1 a	12.8 ab
WPB 926	HRS	52.4 a	48.4 a	59.9 a	13.6 a
Mean		56.0	53.0	60.3	12.2

*Means with the same letter are not significantly different based on t-groupings.

Table 4. Stripe rust severity (%) and reaction type (T) in 1998 and 1999. Data provided by Rollie Line, USDA-ARS, Pullman, WA.

	1998									
	Spillman Farm		Whitlow Farm				Mt. Vernon			
	Stage 7		Stage 5		Stage 7		Stage 4		Stage 5	
	%	T	%	T	%	T	%	T	%	T
Winsome	30	5	10	5	20	5	3	3	2	2
ID377S	0	0	1	2	0	0	0	0	2	5
Penawawa	30	5	10	5	50	5	20	5	70	5
Alpowa	50	5	20	5	30	5	1	5	20	5

	1999							
	Whitlow Farm				Mt. Vernon			
	Stage 6		Stage 7-8		Stage 3-4		Stage 8	
	%	T	%	T	%	T	%	T
Winsome	0	0	1	2	0	0	0	0
ID377S	0	0	0	0	0	0	0	0
Penawawa	1	2	5	8	30	7	60	7
Alpowa	2	5	2	5	20	5	70	7

Table 5. Leaf rust severity and reaction type in 1998 Oregon and Washington trials.

	Whitlow Farm 1998 Stage 8	Corvallis 1998	
	%	%	Rxn
Winsome	05	5	MR
ID377S	99	40	MS
Alpowa	99	.	.
Klasic	.	40	MS

Table 6. Mean grain yields from Pendleton and Corvallis breeding trials,1995 through 1999.

	Grain Yield
	Bu/a
Winsome	73.3a
ID377S	71.1a
Klasic	65.3b

Table 7. Mean grain yields from the Western Regional Hard Spring Wheat Nursery, 1990 through 1992.

	1990	1991	1992
	Bu/a, rank	Bu/a, rank	Bu/a, rank
Winsome	91.9, 6	90.3, 9	96.5, 4
Klasic	88.9, 38	82.3, 45	82.4, 40
ID377S	.	93.7, 2	99.4, 1

Table 8. Grain yield, test weight, and grain protein content from the 2000 State Variety Trials in Oregon and Washington.

		Mean Yield* bu/a		Test Wt. lbs/bu		Protein %	
		Oregon	Washington	Oregon	Washington	Oregon	Washington
Variety	**Class**	**11 sites**	**14 sites**	**11 sites**	**14 sites**	**11 sites**	**14 sites**
Winsome	HWS	80.8a	69.2a	61.7a	58.9c	11.4bc	12.5bc
ID377S	HWS	78.1a	71.7a	62.0a	60.5ab	12.1b	13.0ab
Penawawa	SWS	67.4a	69.1a	61.3a	60.5ab	11.3bc	11.5cd
IDO533	HWS	79.5a	73.4a	62.6a	61.2a	12.2b	12.7b
Scarlet	HRS	68.4a	68.1a	61.3a	59.7bc	13.4a	13.9a
Alpowa	SWS	77.5a	71.3a	62.4a	61.1ab	10.7c	11.1d
Mean		75.3	70.5	61.9	60.3	11.8	12.5

*Means with the same letter are not significantly different based on t-groupings.

Table 9. Results of end-use quality analyses, paired comparisons, conducted by the USDA-ARS Western Wheat Quality Laboratory, 1990-1998.

	Test Weight		Grain protein		Grain hardness		1000 Kernel weight			Flour yield		Flour ash		Milling score		Flour protein	
	lb/bu		%, 14%mb		SKCS units		gm			%		%		0-100		%, 14%mb	
	N	Mean	N	Mean	N	Mean	N	Mean	Sdev	N	Mean	N	Mean	N	Mean	N	Mean
Winsome	24	62.4*	19	12.2	17	86.3*	17	34.1*	8.9*	13	69.0*	7	0.43	6	80.0*	14	11.1
ID377S	24	63.1	19	12.6	17	75.9	17	37.6	10	13	66.2	7	0.43	6	76.9	14	11.3
Winsome	14	61.5*	13	12.3*	8	80.3*	8	33.8*	9	14	68.8	14	0.40*	14	80.8	14	11.0*
Klasic	14	62.9	13	13.5	8	57.8	8	39.7	9.6	14	68.8	14	0.36	14	82.5	14	12.4

	Peak viscosity		Fl. swelling vol.		Absorption		Mixing time			Loaf volume		Loaf grain		Noodle color			
	RVA units		cc		%		min			cc		0-9		L @24hr			
	N	Mean	N	Mean	N	Mean	N	Mean		N	Mean	N	Mean	N	Mean		
Winsome	14	166*	2	19.8	7	66.5	7	4.1		7	896*	7	5.4	4	78.9		
ID377S	14	230	2	21.6	7	64.7	7	4.3		7	839	7	5.6	4	79.8		
Winsome	12	172*	3	21.6	14	66.3	14	4.2*		14	863*	14	5.7*	7	82.0*		
Klasic	12	229	3	23.5	14	66.4	14	5		14	1039	14	3.3	7	76.2		

* Significantly different means based on paired t comparisons.

Table 10. Asian noodle analyses conducted by the Wheat Marketing Center

		1995 Crop Year				1996 Crop Year				1998 Crop Year			
		Winsome	377S	Nuwest	Control	Winsome	377S	Nuwest	Control	Winsome	377S	Nuwest	Control
Flour protein	%, 14%mb	10.8	11.3	10.4	.	10.2	10.3	11.5	10.1	9.8	10.5	9.7	11.6
Flour yield	%	74	72.5	75.1	.	68.7	72.2	76.4	.	60	60	60	.
Flour ash	%	0.43	0.47	0.37	.	0.5	0.48	0.4	0.46	0.45	0.49	0.4	0.37
Grain hardness	SKCS units	88	67	72	.	95	83	79	.	104	81	78	.
Hokkien Noodle	Point value												
Machining	20	14	14	12	14	14	14	14	14	3.3	3.75	3.5	3.5
Dough sheet appearance	5	4	4.25	4	3.5	4	4	3.5	3.5	3	3.5	3.5	3.5
Cooking yield	10	6.75	7	6.75	7	7.3	7.9	7.5	7	6.5	6.8	6.3	7
Texture	20	15	14.9	14.8	14	14.4	14.4	14.7	14	14.3	12.8	14.9	14
Uncooked noodle color	20	17.1	19.6	19.6	14	15	16.6	19.1	14	13.1	14.7	14.7	14
Cooked noodle color	20	15.9	18.6	18.8	14	15.3	15.7	19.3	14	13.5	14.4	15	14
Shelf life	5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Total score	100	74.5	81.9	79.1	70	73.4	76.1	81.6	70	57.1	59.4	61.5	59.5
Uncooked L, 0hr		80.7	80.23	81.81	78.86	78.65	80.07	79.57	77.74	79.48	80.14	81.16	80.63
Uncooked __ L, 24hr		4.69	4.44	4.19	6.23	5.11	4.98	4.15	5.08	7.54	8.3	7.69	5.48
Cooked L, 0hr		80.36	80	81.06	78.17	78.39	77.87	79.15	76.48	76.46	77.65	78.58	78.52
Cooked __ L, 24hr		-0.51	-0.68	-0.74	-0.57	0.07	-0.9	-1.35	-0.87	0.57	4.03	-0.01	-0.06
Taiwan Raw Noodle	Point value												
Machining	20	14	14.5	16	14					15.6	15	15.2	14
Dough sheet appearance	5	3	3.5	4	3.5					2.5	3	4	3.5
Color stability	30	23	18	27	21					21	21	22	21
Cooking yield	5 (0)*	4	3	3.5	3.5								
Cooking tolerance	5 (0)	3.5	3.25	3.5	3.5								
Texture 5-min	17.5 (20)	12.8	11.9	11.4	12.3					13	13.2	12.6	14
Texture 10-min	17.5 (25)	12.2	11.5	10.2	12.3					16.9	16.6	15.1	17.5
Total score	100	72.5	65.7	75.6	70					68.9	68.7	68.9	70
L, 0hr		84.93	82.83	86.82	84.34					84.78	82.41	83.73	83.14
__ L, 24hr		5.89	6.1	5.26	6.12					7.81	9.29	8.37	9.14
* Number in parentheses indicates point value assigned for 1998 evaluations.													
Control samples were selected commercial flours used for noodle processing.													

Significance level of p=0.05 was used for all F tests, t-tests, and in calculation of LSD values.

Exhibit E – Statement of Ownership

The variety 'Winsome' is a result of long-term collaborations in wheat breeding and wheat improvement between Oregon State University and the International Center for Wheat and Maize Improvement (CIMMYT). Early generation selection and management of F1 through F6 breeding generations were conducted under the direction of researchers at CIMMYT. Final breeding, selection, and evaluations, from F7 generation to variety release, were conducted under the direction of the OSU Wheat Breeding and Genetics program.

A copy of an email from Dr. S. Rajaram, Director of the CIMMYT Wheat Program, is provided in which CIMMYT grants Oregon State University the opportunity to release and market Winsome under PVP guidelines, with appropriate acknowledgement of CIMMYT's contributions to its development. The email is dated January 14, 2000.

The Breeder seed class of Winsome will be maintained by the Idaho Foundation Seed Program, University of Idaho, Kimberly, ID. Other recognized seed classes are Foundation, Registered, and Certified per AOSCA standards. Seed of Winsome has been deposited in the USDA National Small Grains Collection, Aberdeen, Idaho.

20010011

Hermeling, Mark

From: cjp@orst.edu%inter2
Sent: Tuesday, April 24, 2001 10:56 AM
To: Hermeling, Mark
Cc: sja@ip-rights.com%inter2; William.Hostetler@orst.edu%inter2; Russell.S.Karow@orst.edu%inter2
Subject: FW: 69 - PVP of Winsome

-----Original Message-----
From: Rajaram, S. [mailto:S.RAJARAM@CGIAR.ORG]
Sent: Friday, January 14, 2000 6:29 AM
To: 'cjp@orst.edu'
Cc: 'Kronstad, Warren E., Dr.'
Subject: 69 - PVP of Winsome

To: Dr. Jim Peterson
cc: Dr. W.E. Kronstad

Dear Jim,

Thanks a lot for releasing Winsome. CIMMYT is pleased to grant OSU to release and market this variety through PVP guidelines. However, I would appreciate that CIMMYT is recognized as co-developer of the variety.

All the best,

S. Rajaram,
Director, Wheat Program
CIMMYT

> ----------
> From: cjp@orst.edu[SMTP:cjp@orst.edu]
> Sent: Monday, January 03, 2000 5:27 PM
> To: SRajaram@cgnet.com
> Cc: Warren.E.Kronstad@orst.edu; Russell.S.Karow@orst.edu;
> Mary.C.Verhoeven@orst.edu; M.VAN-GINKEL@CGIAR.ORG
> Subject: PVP of Winsome
>
> Dear Raj,
>
> OSU is preparing to release the hard white spring wheat variety 'Winsome'
> in
> the next month. As you probably know, Winsome was a direct selection from
> the 18th IBWSN. It will be the first hard white variety released by OSU.
> Over the last year, we have struggled to find an appropriate release
> mechanism that can best serve the growers and industry. We have finally
> decided it best to 'open release' Winsome. However, we also believe it is
> important to obtain PVP on Winsome, using the Title V option, to establish
> ownership of the cultivar and encourage use of certified seed.
>
> As the original stock was developed by CIMMYT, I am now requesting
> permission from CIMMYT for OSU to take the lead and apply for PVP on this
> variety. If there is a problem with OSU being listed as 'owner' on the
> PVP,
> or if CIMMYT would prefer this be handled in a different manner (co-owner

> or
> co-developer?), please let me know as soon as possible.
>
> I expect that, in order to obtain PVP, we will need clarification on its
> development and breeding history from CIMMYT. I will be in contact with
> you, or Maarten, later this spring for additional information as we start
> drafting the PVP application.
>
> I hope you have a productive and enjoyable Y2K.
>
> Best wishes - Jim Peterson
>

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

EXHIBIT E
STATEMENT OF THE BASIS OF OWNERSHIP

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S)
State of Oregon, Acting by and through the State Board of Higher Education on behalf of Oregon State University
CIMMYT (International Center for Wheat and Maize Improvement)

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER
OR4870453

3. VARIETY NAME
WINSOME

4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP, and Country)*
c/o OFFICE OF TECHNOLOGY TRANSFER
Oregon State University
312 Kerr Administration Building
Corvallis, Oregon 97331-3002

5. TELEPHONE *(include area code)*
(541) 737-0674

6. FAX *(include area code)*
(541) 737-3093

7. PVPO NUMBER
200100111

8. Does the applicant own all rights to the variety? *Mark an "X" in appropriate block.* If no, please explain. [X] YES [ ] NO

9. Is the applicant (individual or company) a U.S. national or U.S. based company? [X] YES [ ] NO
If no, give name of country

10. Is the applicant the original owner? [X] YES [ ] NO *If no, please answer one of the following:*

a. If original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. national(s)?
[X] YES [ ] NO If no, give name of country

b. If original rights to variety were owned by a company(ies), is(are) the original owner(s) a U.S. based company?
[X] YES [ ] NO If no, give name of country

11. Additional explanation on ownership *(if needed, use reverse for extra space)*:

PLEASE NOTE:

Plant variety protection can be afforded only to owners (not licensees) who meet one of the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.

2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.

3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definition.

STD-470-E (07-97) *(Destroy previous editions).*
Electronic version designed using WordPerfect InForms by USDA-AMS-fMB.